may be framed in the matter of lending books, regulating the time for which they may be kept, the care that might be taken of them and the liability of the Members to replace them, if they are badly damaged or lost. Rules have been framed to avoid similar difficulties by other libraries also. I know that in the Madras Legislative Council Library, I speak from my experience of that library 3 years ago, there is a lending section. My submission to this House is that it may recommend to the Government that the practice of other libraries in this respect might be copied by us and I am sure a useful copy it will be. I do not think there will be any difficulty in the matter of the acceptance of this resolution as far as the Members are concerned. With these words, I commend this resolution for the acceptance of this House.

Mr. A. B. Salem.—I rise to second it. What is the use of the library if the books are to be shut up in the almirah and not made available to Members? We sanctioned Rs.4,000—every year Rs. 1,000. And the Members coming from distant places, are they expected to sit and read and then go back? We are coming here only during the sessions, and this year there was no time to go and sit in the library and therefore this library serves no useful purpose for the Council Members. Is it to be shut up there, to be eaten away by white ants or is it to be perused by the Members for their benefit and knowledge? Your explanation of the impossibility is only imaginary. If those books should be of any use at all, they should be allowed to be taken out by Members. The only course open is to make rules. After all there are only 30 non-official Members to deal with. And what is the difficulty? I do not think that any Member would be without doing his duty properly to the library and I do not think there will be any difficulty. I think the difficulties are imaginary ones and not substantial ones.

Mr. T. K. Krishna Menon—The difficulties pointed out on a former occasion were not imaginary; and they were also accepted by the Members of this House. None the less, the Government have in view the idea to open a lending section to the Council Library, and rules will be framed to give effect to it as early as is practicable.

Mr. K. Mohamed Seethi.—Since the resolution has been accepted, I don't press.

Dr. A. G. Menon.—It has been accepted. It may be put to votes.

Question put and agreed to.

(6) Sea Erosions.

Mr. K. J. Antony.—I beg to move that "This Council do recommend to the Government to take immediate and urgent steps to prevent

LIBRARY ARCHIVES Kerala Legislative Assembly

sea erosions on the Western Shores of Andikkadau, Cheriakadvu, Kandakkadavu, and Chellanam Desoms."

In moving this resolution, I beg to state that large extents of land and a good number of houses and cocoanut trees have been washed away by the sea in those localities. From an answer to a question asked in the Legislative Session of the Council held in Kumbham 1101, by Mr. George Chakkiamuri, the then Member for Palliviruthi, the House can have an idea of the great havoc done by the sea in those localities.

The question referred to above runs thus: "Will the Government be pleased to place on the table a statement showing the followings: (a) The extent of land washed away by the encroachment of the sea for the last ten years in the villages of the Cochin State lying to the south of Cochin."

"(b) The amount of money spent by the Government for protecting these villages from the erosion of the sea?"

The answer is, "The extent of land washed away to the south of Cochin is:

Rameswaram Village		14. 18	Acres.
Palliviruthi	,,	58. 14	,,
Kumbalangi	,,	67. 46	,,
Chellanam	,,	25. 75	,,

And as for the amount of money spent by the Government for protecting those shores, the answer is, "No money has been spent by the Government for the purpose". In answer to a supplementary question, the Government also says, "The question was brought to the notice of the Government so early as 1907."

From these statements, the House can have an idea of the great havoc done by the sea in those localities for the last few years, and of the extremely indifferent attitude of the Government to the suffering people of those localities. I request that the Government may, therefore, take immediate and urgent steps to stop the further erosions of the sea in those Desoms. With these remarks, I commend the motion to the acceptance of the House.

Mr. Thomas Manjuran.—I second that motion. I am glad to find that this motion has come up early enough unlike other unfortunate motions. This is rather an important question in the State. My Hon'ble friend gave figures as regards the erosion that took place south of the Cochin Bar. Now, as a matter of fact, to the north of the Cochin Bar the erosion is on a far bigger scale. Already in the villages of Edavanakkad and Nayarambalam not less than 10,000 acres have been washed away. That matter was also brought to the notice of this House

LIBRARY ARCHIVES Kerala Legislative Assembly

long long ago and action was promised. However, nothing was done up-to-date. And what is still more tragic is to this date land tax is being collected from the owners of lands which are now in the Arabian sea. I find the Hon'ble Member for Revenue looking surprised at that. I am going to move the Government, more particularly, so that I shall substantiate my statements before them. To collect land tax for lands which are at the bottom of the sea, I respectfully beg to submit to this House, is rather surprising. Whatever that may be, that is a matter the land-owner and the Government have to settle between themselves. But this has become a public menace. 1,000 acres is not a little extent also. As a matter of fact, beyond filling up of a certain breach which came into existence during 1099 floods, nothing whatsoever, of a protective nature, has been done. Unless something is done, well, there is going to be a catastrophe one of these days and I am afraid that is a matter which bears upon the harbour too. Well, I know nothing about the effect of sea erosions on the harbour. Common sense tells me that when a sea erosion is taking place the sand taken from one place is deposited in another place. That is what we find. I wish to support this motion so that Government's eyes may be opened. I respectfully submit that this resolution ought to be unanimously passed so that Government may take early steps to what is a standing danger to the inhabitants of the west coast.

Mr. K. Mohamed Seethi.—Sir, I also deem it my duty to support this resolution, because this menace of sea-erosion is a common menace to the whole of the sea-coast to the north of Cochin and to my knowledge the villages of Azhikode, Eriyad and Edavilangu in Cranganur have suffered a lot on account of the invasions of the sea. I myself am one of the victims, having lost several acres of land owing to this calamity. This is a very important question. Many people have lost their all and people who were rich one day became absolute paupers the next day because their lands were all washed away by the sea. This is a very important matter which should engage the early attention of the Government who should adopt some remedial measures.

Mr. P. Krishna Menon.—In supporting this resolution, I wish to attach more importance to the economic aspect of the question, in as much as we see that extensive lands have been washed away. But relying more or less upon the figures which will be found in the Council Proceedings, during the last ten years or so the area washed away is not less than about 2,000 acres of land. And these are lands lying on the sea-shore and as such the most productive in cocoanut cultivation. Seeing the fertility of the soil and realising the profits that the cultivators

LIBRARY ARCHIVES Kerala Legislative Assembly

will derive from such lands, it is not too much to say that the lands may be valued at not less than Rs. 5,000 per acre. Seeing the extent of the lands that has been washed away, the House can see more or less the loss Cochin as a whole, has suffered in being deprived of so much of valuable land. Now my surprise is all the more greater when we see that, when no protection from erosion has been made by the Cochin Government, either in the southern portion or in the northern portion, we find, as a matter of fact, that effective measures have been adopted by the British Government just to the north of the harbour. An embankment has been put up with groynes which would sufficiently check the erosion of the land and it is happy news to say that those portions, inhabited by very poor people, have been sufficiently protected and they have had not the necessity of migrating to places of protection. When, as a matter of fact, we have an object lesson as to how to prevent this injury at our very door, it is rather strange to find that our Government has not been moved to adopt the same measure, at least to prevent the damage done a couple of years ago. I visited the locality to the south of the harbour and there I was shown the gate-way of a church through which elephants could move in former days; I myself had to stoop down to cross the doors because so much sand has been thrown into the church and the church was not being used for the purpose for which it was built. Last year, I enquired of the church and it is no surprise to me to hear that the church did not exist and was stolen away by the Arabian Sea. Such is the havoc done. And it is only the earnest wish of the House that early measures may be taken to prevent further destruction.

Mr. V. K. Aravindaksha Menon.—Sir there is probably no question which would receive more serious consideration at the hands of a Government than the protection of its boundaries. The coast line of Cochin, which is about 25 miles long, extends from Cranganur on the north to Chellanam on the south. And this coast line has been fluctuating from times immemorial. There have been accretions in certain parts like Narakkal and erosions in others like Chellanam and Andikkadavu. The damages caused by these erosions have been considerable but have been very gradual. The question of coast protection is not confined only to Cochin, but it exists in every country which has got a coast line. And it has always been found that the cost of such protection is very prohibitive.

The Member for Vytilla has touched upon the question that we should take a lesson from the bund constructed at Vypeen and continue the same all along the Cochin fore-shore line.

LIBRARY ARCHIVES Kerala Legislative Assembly

Now, I would point out that such works can be done only when the importance is so great. In this particular case it is the Cochin Harbour. The Harbour has become a very important port of late, and it is our duty to protect that port against any possible failure. If a breach happens at Vypeen the quantity of water flowing through the Cochin Harbour would be considerably reduced and the channel will get silted. So, I can understand why the coast line of Vypeen has been protected. But have the British Government protected any point on the fore-shore north of Cranganur? We have also constructed in Ochanthuruth protective works where the sea threatened most. We have been for the last two or three years constructing parallel groynes at Ochanthuruthu but we have found that these groynes are very expensive to construct and to maintain. The cost of one bund which can withstand the lashings of the sea during the south-west monsoon comes to about Rs. 7,000 for a length of 200 feet. That comes very nearly to about Rs. 35 per feet. We have got 25 miles of line to protect and you can imagine what it will cost but, if the necessity for protection is great we ought to do it. Otherwise, to spend so much money on coast protection, I do not think it possible from a financial point of view.

Mr. Thomas Manjuran.—Will it not solve the difficulty if you put groynes vertically and not parallel, at the affected areas, as we generally do to protect our property against river floods? I suppose you understand what I mean.

Mr. V. K. Aravindaksha Menon.—This question has been very carefully investigated by the Harbour Department and they have given us as their considered opinion that groynes perpendicular to the shore do more harm than good and that the parallel groyne is the type suitable for the conditions existing in the Cochin foreshore. That is a technical point.

Well, as I have already explained, the question of coast protection on a general scale is a very expensive thing which our State may not be in a position to undertake at the present time. But if in any case it is found that the situation is very serious and a breach to the backwaters imminent, then the State will do any protection that is necessary.

Mr. Thomas Manjuran.—May I ask you again whether the State has made an efficient study of this question and if there are any documents of experts on the matter?

Mr. T. M. Krishna Menon.—There is a press communique upon this.

Mr. Thomas Manjuran.—May I know whether any experts have been asked to study the question and make a report?

Mr. V. K. Aravindaksh Menon.—Mr. Bristow, the Harbour Engineer, had occasion to study it. He has made a

LIBRARY ARCHIVES Kerala Legislative Assembly

study of the question. That was the subject of a press communique in 1921.

Mr. P. Krishna Menon.—May we know the date of the report?

Mr. V. K. Aravindaksha Menon.—21st May 1921. There was a meeting convened at Trichur where the people of Andikkadavu, Vypeen and Kuzhuppilli were present and this point was discussed. Mr. Bristow was also present.

Mr. Thomas Manjuran.—Will the Government be pleased to place that report on the table?

Mr. V. K. Aravindaksha Menon.—If you want, I shall read it.

"His Highness' Government have had under anxious consideration for some time past the question of the measures to be taken for the protection of the sea coast of the State against erosions that have been taking place on a large scale for several years in the neighbourhood of Andikkadavu, Vypeen Kuzhuppilli and Cranganur. This question being intimately connected with that of the improvement of the Cochin Harbour, it was resolved to consider both the questions as parts of one complete scheme. Correspondence relating to this important subject began with the Government of Madras so early as 1907 but nothing really effective has till now been done towards prevention of erosions.

The Government of Madras recently appointed an expert as their Harbour Engineer in the person of Mr. R. C. Bristow, who assumed charge of his office nine months ago. Mr. Bristow has since then studied the question of erosions on the west and east coasts of the Madras Presidency, and has also made a careful survey of the west coast line for over 20 miles to the north and south of the Cochin Harbour. He has also conducted some experiments on one section of the eroded coast line in the neighbourhood of Vypeen the result of which appears to be promising.

2. Opportunity was therefore taken to explain the situation to the representatives of the land-holders whose lands have been washed away in the three localities of Andikkadavu, Vypeen and Kazhuppilli at a conference held at the Trichur Residency on the 21st May 1921, at which the Harbour Engineer Mr. Bristow and the Diwan Peishkar of the State were present.

3. At the conference, the representative of the land-holders of each of the above three localities stated his case and indicated on plans the extent of the erosions and also suggested certain remedial measures. After all the representatives had spoken, the Harbour Engineer began by assuring the conference that the Governments concerned were fully alive to the seriousness of the situation and had devoted more time and trouble to ascertain the causes of the erosion than the land-holders were perhaps aware of. Afterwards he proceeded to explain that wherever fine sand—specially that rapidly dried by a hot sun—was acted upon by waves of sufficient height, the tendency was towards disruption of foreshore, but that as the sand thus removed was indestructible, it had to be re-deposited when the water was less turbulent, either in the same place or somewhere else, generally the latter. Acccoding to his observations this process was going on both along the east and west coasts of India, but on the east coast there was a constant "feed" of sand brought down by the great rivers which discharge on that side. He also informed the conference that a survey of 20miles on the west coast, made under his supervision last year, showed that there were

LIBRARY ARCHIVES Kerala Legislative Assembly

places where erosion had recently occured, places where the breach was maintaining itself and places where recent accretion was evident and that the loss due to erosion was roughly balanced by the gain by accretion. He however pointed out that the cycle of recurring erosions and accretions could not yet be defined, and that one could not state with certainty the exact reason why erosion should occur in one place on a long straight coast and not in another. But, in his view, the pre-disposing cause was probably the nature of the sea bottom close to the shore. He also laid stress on the point that, in dealing with this problem, it should be remembered that any permanent preventive work at one point invariably led to the disturbance of foreshore equilibrium in the vicinity, and that finality would onlybe reached when the whole coast was reinforced by protective ribs of one sort or another. In his opinion such a solution was impracticable at present not only on account of the initial capital outlay required but because also of the sheer impossibility of maintaining such a length of work except at an absolutely prohibitive cost for staff and materials.

4. Mr. Bristow concluded his remarks by informing the conference that the Governments concerned were, in the above circumstances, driven to the expedient of maintaining by special works the most vulnerable places from a harbour point of view, pending the discovery of some simple anti-erosion method which could be carried out by the foreshore-owners themselves at comparatively small cost and with materials and labour available locally. He also explained at this stage the sequence of operations at Vypeen and stated that he did not pretent to have reached a solution there, that they were determined to have the Vypeen peninsula, that there had been accretion there since the last monsoon owing to the parallel groynes, and that even if these were washed away and all the accretion lost, there would still be other resources to fall kbac on. In regard to the latter point, he described the practice of the British Admiralty in vitally important cases in England, but at the same time, he drew attention to the fact that that practice was very expensive and could only be adopted as a last resort.

5. Finally, Mr. Bristow appealed to the owners to help in the solution by their own efforts and gave them a hint as to one line of investigation which could be undertaken by them with little expense. This related to the use of floating timbers for changing the character and lessening the force of a wave, and was used at Penzance on the English coast many years ago with success but in rather different circumstances. He explained that this was the ideal solution if it could be adapted, as all the materials necessary were cocoanut trees and coir rope which nature had provided in every place where erosion was occurring. He also expressed his readiness to attend and give any help he could in the making of this experiment. The representative of the Andikkadavu land-holders agreed to start an experiment at once on the lines suggested.

6. The conference then terminated with an expression of satisfaction and confidence in the attitude taken by the authorities".

Mr. K. Ayyappan.—May I know from the Government if a man loses his property by erosion, will he be given a corresponding portion in the new accretion?

Mr. T. M. Krishna Menon.—The matter is under consideration. Some time back some exchange was given in Andikkadavu and other places. In this connection, I would like to contradict one statement made by the Hon'ble Member for Trippunittura. It is a fact that land revenue is collected from

LIBRARY ARCHIVES Kerala Legislative Assembly

such people, but the fault is that of the pattadar himself. He never relinquishes the holding, hoping that an accretion would be formed at the site. If he relinquishes it we would accept it and remit the land revenue.

Mr. P. Krishna Menon.—And what is the ultimate conclusion?

Mr. V. K. Aravindaksha Menon.—It may not be financially possible for the Government to protect the entire coast line. They will do all that is necessary in case of emergencies when actual breaches are imminent.

Mr. K. Ayyappan.—Is it financially possible to help the people not by way of protective works but by giving some money or some other relief? You are giving relief to the sufferers in flood time. There is no difference between flood havoc and the sea havoc.

Mr. T. M. Krishna Menon.—The question had not to be considered till now.

Mr. A. B. Salem.—If the Government find it impossible to tackle the problem effectively, why should the motion be pressed further?

The following amendment to the resolution was not moved, hence it was considered withdrawn.

Mr. A. K. Kunhi Moideen.—*Add after "desoms" the words "as well as Cranganur and Edavilangu".*

The resolution was then put to the vote of the House and negatived.

The House rose for the day at 5" to 5 p. m.

T. K. KRISHNA MENON,
Secretary to the Council.

LIBRARY ARCHIVES Kerala Legislative Assembly